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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/019,134 | 12/20/2001 | Axel Heinrich | CL/V-31010A | 1918 |
| 1095 | 7590 | 06/08/2004 | EXAMINER | |
| NOVARTIS CORPORATE INTELLECTUAL PROPERTY ONE HEALTH PLAZA 430/2 EAST HANOVER, NJ 07936-1080 | | | SAWHNEY, HARGOBIND S | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2875 | |

DATE MAILED: 06/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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|--|--|--|--|
| <p align="center">Office Action Summary</p> | Application No. 10/019,134 | Applicant(s) HEINRICH ET AL. | |
| | Examiner Hargobind S Sawhney | Art Unit 2875 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-10 and 12-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-10 and 12-16 is/are rejected.
- 7) ☒ Claim(s) 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3</u> . | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

1. The amendment filed on February 23, 2004 has been entered. Accordingly, Claim 9 has been amended; claim 2 has been cancelled; and a new claim 17 has been added.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1,3,6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (US Patent No. 6,220,845) in view of Ono (Japanese Pattern No.: JP 408129954A) hereafter referred as Ono.

Regarding claims 1 and 16, Martin et al. ('845) discloses a UV illuminating device (Figure 3) comprising:

- a ultraviolet (UV) lamp(not shown, column 8, lines 30 and 31) remotely generating radiation, and the generated radiation being routed to the clamped mold halves and polumerizable material via fiber optics (column

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8, lines 55-59) capable – intended use - of being linked to one casting mould.

However, Martin et al. ('845) does not specifically teach the ultraviolet (UV) lamp being surrounded by a plurality of optical fibers.

On the other hand, Ono discloses a mercury lamp 6 including a light emitting part 6a being surrounded by fiber optics (Figure 1, English translated abstract)

It would have been an obvious to one having ordinary skill in the art at the time of invention to modify the optic –bases UV light system of Martin et al. ('845) by providing optic fibers surrounding the UV lamp as taught by Ono for supplying equal share of the generated radiation energy for uniform curing of each photo-curable lens.

Regarding Claim 3, Martin et al. ('845) in view of Ono further teaches the UV lamp being a mercury lamp (Figure 3, column 9, lines 5 and 6).

Regarding Claim 6, Martin et al. ('845) in view of Ono teaches the UV illuminating device comprising a mercury lamp as a UV light source 44 having emission spectrum of UV intensity at 320-390 nm (Figure 3, column 9, lines 5-8). However, Martin et al. ('845) in view of Ono does not teach the UV lamp operating at the claimed emission spectrum 280-360.

It would have been an obvious to one having ordinary skill in the art at the time of invention to modify the UV illumination system of Martin et al. ('845) in view of Ono for its operation at the emission spectrum of 280-360, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

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4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (US Patent No. 6,220,845) in view of Ono (Japanese Pattern No.: JP 408129954A) as applied to Claim 3 above, and further in view of Biller et al. (U.S. Patent No. 5,824,373).

Martin et al. ('845) in view of Ono discloses the UV illuminating device comprising a mercury lamp as a UV light source. However, neither combined nor individual teaching of Martin et al. ('845) and Ono teaches the mercury lamp being a doped mercury lamp.

On the other hand, Biller et al. ('373) discloses a radiation curing of powder coating with the UV radiation source (abstract, column 22, lines 17-20 and lines 29-33). Biller et al. ('373) additionally teaches the uses of doped mercury lamps (column 22, lines 29-33). This type of mercury lamps doped with metal halide is well known in the art for photo-polymerization process.

It would have been an obvious to one having ordinary skill in the art at the time of invention to modify the UV illumination system of Martin et al. ('845) in view of Ono by providing a doped mercury lamp for furnishing UV radiation energy as taught by Biller et al. ('373) for advantages and benefits including enhancement of particular wavelengths of the radiation source and its long operational life.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (US Patent No. 6,220,845) in view of Ono (Japanese Pattern No.: JP 408129954A) as applied to Claim 1 above, and further in view Nath (U.S. Patent No. 3,995,934)

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Martin et al. ('845) in view of Ono teaches the UV illuminating device comprising a mercury lamp as a UV light source coupled to optical fibers. However, neither combined nor individual teaching of Martin et al. ('845) and Ono specifically discloses the optical fibers being liquid optical fibers.

On the other hand, Nath ('934) discloses a flexible liquid light guide –optical fiber 10- (Figures 1 and 2) applied for light, including UV radiation, transmission, filled with light transmitting fluid 20 (Figures 1 and 2, column 2, lines 10 and 11).

It would have been an obvious to one having ordinary skill in the art at the time of invention to modify the UV illumination system of Martin et al. ('845) in view Ono by providing liquid optical fibers for light transmission as taught by Nath ('934) for advantages and benefits of efficient UV – high powered light transmission for long period of time..

6. Claims 7,8 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (US Patent No. 6,220,845) in view of Ono (Japanese Pattern No.: JP 408129954A) as applied to claim 1 above, and further in view Kennedy et al. (U.S. Patent No. 5,521,392).

Regarding claims 7,8 and 12-14, Martin et al. ('845) in view of Ono teaches the UV illuminating device comprising a remotely generated polymerization radiation and routed via fiber optic system (Figure 3, column 8, lines 55-59). However, neither combined nor individual teaching of Martin et al. ('845) and Ono teaches the detailed of the disclosed UV radiation system including:

- an UV radiation measuring unit;

- a sensor measuring the radiation intensity of the UV lamp, and being connected to the UV radiation regulating unit;
- a diaphragm positioned between the optical fiber and the UV lamp of the device;
- the diaphragm further including an aperture being adjusted by a stepping motor unit; and
- the aperture of the diaphragm being controlled in accordance of the measurement of intensity of the emitted UV radiation.

On the other hand, regarding claims 7,8 and 12-14, Kennedy et al. ('392) discloses a light curing system (Figure 2) with a control module 20 operationally coupled to the components including:

- a sensor 18 (Figures 1 and 2, column 3, lines 1-3, and column 5, lines 1-4) measuring the radiation intensity of the UV lamp 12 (Figures 1 and 2, column 3, lines 1-3; and column 4, lines 54 and 55), and being connected to the UV radiation regulating unit 20 (Figures 1 and 2, column 3, lines 1-3; and column 5, lines 1-4);
- an UV radiation measuring unit 14 (Figures 1 and 2, column 3, lines 1 and 2, and column 4, lines 27,28 and 36-39);
- a diaphragm 54 (Figures 1 and 2, column 4, line 28) positioned between the optical fiber 16 (Figures 1 and 2, column 3, line 3) and the UV lamp 12 of the device;

- the diaphragm 54 further including an aperture (Not shown) being adjusted by a solenoid 60 (Figure 2, column 4, lines 29-32), functionally equivalent as a stepping motor unit 58 (Figure 2, column 4, lines 29-32); and
- the aperture of the diaphragm 54 being controlled in accordance of the measurement of intensity of the emitted UV radiation (Figure 2, column 4, lines 36-41).

Thus, regarding claims 7,8 and 12-14, it would have been an obvious to one having ordinary skill in the art at the time of invention to modify the UV illumination system of Martin et al. ('845) in view of Ono by providing a control module as taught by Kennedy et al. ('392) for advantages and benefits of producing a preselected amount and intensity of UV light energy needed for photo curing of polymerizable material.

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (US Patent No. 6,220,845) in view of Ono (Japanese Pattern No.: JP 408129954A) as applied to Claim 1 above, and further in view Sopori (US Patent No. 5,217,285).

Regarding Claim 15, dependent on Claim 1, neither combined nor individual teaching of Martin et al. ('845) in view of Ono discloses a UV condenser being positioned between the optical fiber and the upper mould half.

On the other hand, Sopori ('285) teaches an illuminating apparatus emitting UV light, and comprising a condenser 30 (Figure 1, column 6, line 68; column 7, lines 1 and 2; and column 9, lines 35-39) positioned between the optical fiber 48 (Figure 1, column 9, lines 29 and 30) and a surface receiving UV light 42 (Figure 1).

it would have been an obvious to one having ordinary skill in the art at the time of invention to modify the UV illumination system of Martin et al. ('845) in view of Ono by providing a condenser as taught by Sopori ('285) to collimate UV light for benefits and advantages of uniform distribution of UV light needed for even curing of the lens.

Allowable Subject Matter

8. Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record, including Martin et al. (US Patent No. 6,220,845), of Biller et al. (U.S. Patent No. 5,824,373), fails to show or suggest the applicant's invention as claimed. Specifically, the prior art of record does not teach a UV illuminating device combining:

- a plurality of optical fibers each providing a level of UV illumination to one casting mold as recited in Claim 7.

The above combination, including operational coupling of one optical fiber to only one casting mould makes this invention unique.

Response to Amendment

9. Applicant's arguments filed on February 23, 2004 with respect to the 35 U.S.C. 103(a) rejections of claims 1,3-10 and 12-16 have been fully considered but they are moot in view of the new ground(s) of rejections.

Conclusion


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hargobind S Sawhney whose telephone number is on 571-272-2380. The examiner can normally be reached on 6:15 - 2:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 571-272-2378. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications and 703-872-9319.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number 703-308-2956.

HSS

6/3/2004



THOMAS M. SEMBER
PRIMARY EXAMINER